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Being Human in the Age of Life 3.0

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Abstract: We are facing a shift, a shift from the carbon-based to the silicon-based form of life. Yes, the first two forms of cosmic evolution have been surpassed by evolution 3.0 i.e., *Technological evolution*. Unlike the first two evolutions, life 3.0 is rapid and capable of evolving in a fraction of seconds. When we say technology is advancing that means the human brain has been outsourced. Yes, the only relevant question in this phase is what it means to humanity? Will it lead to mass automation in the various fields of transportation, medical care, and other human working sectors? Will mass automation result in the *rise of a useless class*? And ultimately will it end in an age of *digital dictatorship*? Then what it means to be human in an age

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of digital dictatorship? This write- up addresses the very relevant possibilities, effects and challenges of Technological evolution that pose before humanity?

Keywords: Artificial intelligence (AI), Artificial General Intelligence (AGI), Alan Turing, Life 3.0, Evolution 3.0.

Introduction

Max Tegmark, the American-Swedish physicist gave the title for the first chapter of his book *Life 3.0: Being Human in the Age of Artificial Intelligence* as "Welcome to the Most Important Conversation of Our Time" Yes, the time has changed, and now we have entered into the third phase of evolution i.e. technological evolution. And this third phase seems now the most important conversation of our time. Tegmark speaks about the three stages of life i.e. biological evolution, cultural evolution and technological evolution. Life 1.0 denotes the biological evolution; unable to redesign either its hardware or its software during its lifetime: both are determined by its DNA and change only through evolution over many generations. Life 2.0 denotes the cultural evolution, can redesign much of its software: humans can learn complex new skills- for example, language, professions- and can fundamentally update their worldview and goals. Life 3.0 denotes technological evolution, can dramatically redesign not only its software but its hardware as well, rather than having it wait for gradually evolve over generations. Yes, the time has come for a major evolution- Artificial Intelligence- the two questions that pose before us is when and what? When will it happen and what it means to humanity?

The father of artificial intelligence Alan Turing in his seminal paper *Computing machinery and Intelligence* has said, "I believe that in about fifty years' time it will be possible to programme computers, ... to make them play the imitation game so well that an average interrogator will not have more than 70 per cent chance of making the right identification after five minutes of questioning."(Turing, 1950). The signs of these prophetic words getting fulfilled have been signalled in May 1997 when the several time world chess champion Garry Kasparov was defeated by IBM supercomputer Deep Blue. In 2016 eighteen times GO (world oldest board game) world champion Lee Sedol has been defeated by ALPHA GO, a computer GO programme. It has been further enhanced in December 2017 by a programme called Alpha Zero by defeating another programme called stockfish 8 that can calculate 70 million chess moves per second. Alpha Zero took only four hours to prepare for the game against stockfish 8. Rather than the thousands of human moves from history Alpha zero performed fresh moves that are completely new to the human brain. The technical team revealed that alpha zero is a –self-learned system- that can create its own moves. Alpha Zero proved that even AI can be creative. These radical developments of AI programmes are likely to point to the fact that the next stage of evolution will be a reality in hundred years of time. That's why it becomes the most important conversation of our time.

From Carbon to Silicon-Based Evolution

Life 2.0 i.e. Human life was carbon-based and in the next stage of evolution, it will be silicon-based. When we hear such kind of talks, we may think of it as fiction that will never correspond to reality. Clive Thompson, the science and technology writer says "The cyborg future is here. Almost without noticing it, we've outsourced important peripheral brain functions to the

silicon around us" (Kasparov 2017). If we simply check our day to day life it is very visible that how much we have outsourced our brain. From the simple calculation, data analyses etc. of intellectual capability and heavy lifting of physical capability we have outsourced the human capabilities to simple and complex machines. Google and Wikipedia have made us the instant expert of anything but actually, it doesn't enhance us but rather it makes us dumber. Our capacity to calculate, analyse or to lift has been outsourced from us; which in turn makes us depend on them. "Automation has steadily moved up the ladder of emulating and surpassing human abilities" (Kasparov 2017). We live or we are in a stage of a major shift from human intelligence to artificial intelligence. The tremendous heap of outsourcing of the brain has already done. The simple speech, touch and face recognition in our cell phones are real-life examples of outsourcing of the human brain and it is a clear indication of how far we are relying on artificial intelligence without noticing it. Automated cars and drones are only a much more advanced stage of artificial intelligence. Marvin Minsky, an American scientist says the limitation of machines that we face today is due to the obsolete ways of programming. He tells "Today, we only tell programs some things to do_ without telling them why we want them to do" (Minsky 2006). Minsky believes that by overcoming this problem a better AI can be generated and rectify the present limitations.

This article gives the glimpses of possible dangers of Technological evolution and brings out the questions to be addressed in such a situation.

Richard Feynman in the banquet speech after receiving the Nobel Prize in Physics 1966 said:

> That was the beginning of the idea seemed so obvious to me that I fell deeply in love with it. And, like falling in love with a woman, it is only possible if you don't know too much about her, so you cannot see her faults. The faults will become apparent later, but after the love is strong enough to hold you to her. So, I was held to this theory, in spite of all the difficulties, by my youthful enthusiasm (Minsky 2006).

As Richard Feynman says we have fallen in love with AI without knowing much about it. We have outsourced our brain to AI already. Now there is no point in asking the question - when will it happen? Because it's already there; the only relevant question then remains is what it mean to humanity or how far it can succeed? And fall in love with it.

AI: A Desirable Step

Professor Tegmark writes: "Larry Page said that digital life is the natural and desirable next step in the cosmic evolution" (Tegmark 2017). Mainly humans have two types of abilities they are physical and cognitive. Already we have devised many machines that can replace human or co-work with the human in many physical fields and at present, AI is developing in the cognitive realm also (already we have seen some examples of outsourcing of brain.). Marvin Minsky has expressed that if thinking can be understood as the step-by-step process that it is, then we can build machines - artificial intelligence - that not can only assist with our thinking by thinking as we do but have the potential to be conscious as we are. Yes, AI cannot take glucose or fructose as input like our

human body but what they can take as input are some numerical values in the form of some algorithms. Any human activity that can be turned into an algorithm can function as AI. Robin Gandy a British mathematician and associate of Alan Turing, has written "Human mind is fundamentally a serial machine, accomplishing its work through temporal sequences of processes, each typically requiring hundreds of milliseconds, for execution" (Gandy 1996). All actions, emotions and thoughts performed by human are mechanical and they can be turned into algorithms which can feed AI. "Our choices of the food to mates result not from some mysterious free will, but rather from billions of neurons calculating probabilities within a split second" (Harari, 2018). In other words, we can sum human being as a perfectly working biochemical algorithm; Life 2.0= biochemical algorithm. The Israeli historian Yuval Noah Harari asserts in his book *21 Lessons for the 21st Century* "... emotions and desires are in fact no more than biochemical algorithm" (Harari 2018).[1] Then the evolution of the 21st century will be from perfect biochemical algorithm to numerical algorithm.

The evolution from a cultural or life 2.0 stage to a technological or life 3.0 stage is not a fictitious dream (we have already seen the possibility of shifting biochemical algorithm to artificial algorithms), but it is a hardcore reality amidst us. The AI scientist foresees that the shift from Life 2.0 to Life 3.0 will be complete in another hundred years. "In an artificial world, evolution can literally happen overnight. When evolution proceeds so rapidly, it is hard to say where it might go" (Morris 1999). Now the only relevant question is what it meant to be

[1] This book, I believe, is a very influential one, which will change the course of human discourse for a long time.

human? Will it be a good thing for humanity? Digital utopians[2] agree that we shouldn't worry about it; it will happen but is virtually guaranteed to be a good thing. But at the same time Luddites [3]believe that it will bring a bad outcome. The coming days can be a) age of human plus machine or human-computer centaur, b) Human AI cooperation or competition c) or the age of AI. The future seems inconspicuous. As Luddites and digital utopians say if such a shift take place then the major problem that humanity has to face will be regarding the work. The technological evolution will result in *mass automation* in every possible field which will result in the mass displacement of the human worker. Such a mass displacement will lead to the *Rise of a useless class* and eventually will end in the *rise of a digital dictatorship*.

AI: Transportation and Healthcare Sectors

In 2015 Google provided the first fully driverless ride on public roads. Now at present Waymo LLC undertake the project to develop driverless cars which will be soon on our public roads. Like any other driver, the AI is able to drive the car. While driving the car a human predicts the intention of a pedestrian; a driver's brain recognises the biochemical pattern by analysing facial expressions, tones of voice, hand movements etc. before making a judgement. In the same way through the outsourcing of brain AI perform the same function of a human brain and often it outperforms human. "An AI equipped with the right sensors could do all that far more accurately and reliably than a human" (Harari 2018).

[2] Digital utopian is one who believe that the advancement in science and technology will bring an utopia.

[3] Luddite means a person who opposes to new technology or ways of working.

"AI not only stands poised to hack humans and outperform them in what were hitherto uniquely human skills. It also enjoys uniquely non- human abilities, which make the difference between an AI and a human worker one of kind rather than merely of degree. Two particularly important non-human abilities that AI possesses are connectivity and updateability"(Harari, 2018).

When a human being drives a car each individual car is considered to be a separate entity. Statistics show that there are 1.2 billion cars alone on the road each day. So we can say that 1.2 billion individual entities are riding on the road in a split second, and the worst part is that each car's ability to have a safe ride completely depends upon the varying ability of each driver. Whenever any miscommunication or a miscalculation occurs it ends up in an accident. "Today 1.25 million people have killed annually in traffic accidents (twice the number killed by war, crime and terrorism combined)" (Harari 2018). More than 90 per cent of these accidents are caused by human errors; somebody drinking alcohol and driving, somebody texting a message while driving, somebody falling asleep at the wheel, somebody daydreaming instead of paying attention to the road. Compared to human errors AI commits fewer errors and it also posses' better skills like connectivity and updateability apart from human skills. Once all cars are automated the whole 1.2 billion cars can be connected to each other - resulting in creating a single entity of car rather than 1.2 billion individual drivers. Since it is a single entity it has a better awareness regarding the position of other cars in the entity in advance. It can even know the direction and speed of the other car. So, by having an enhanced communication the traffic accidents can be reduced. The other advantage of using AI cars is updateability. Most of the violations of the traffic rule

happen because of the ignorance of the drivers. If a new rule is implemented it becomes a herculean task to update all drivers; but in an AI system, the traffic rule can be easily updated in a fragment of a second throughout the whole world.

The *Wired* article "How AI Is Tracking the Coronavirus Outbreak"(Knight, 2020) speaks about AI being used in tracking the corona virus. John Brownstein, a Canadian epidemiologist says that "it is critical to determine where the virus may surface if the authorities are to allocate resources and block its spread effectively" (Knight 2020). AI helps them to detect the spread of the virus. The use of AI in detecting the corona affected locations is an example that shows at present how AI works in the medical field. AI has moved from simple AI to AGI (Artificial General Intelligence)[4] The Economic Time posts that "India is facing a shortage of 6000000 doctors and 2 million nurses"(PTI, 2019). Think of each cell phone as an AI doctor. Think of the reach it can make to the rural people of India who have no access to the doctor. By using the new "algorithms and biometric sensors, a poor villager in an underdeveloped country might come to enjoy far better healthcare via Smartphone than the richest person in the world gets today from the most advanced urban hospital" (Harari 2018). By running many alternative algorithms it is possible for a patient to access through her / his Smartphone not just a single authoritative doctor but actually a hundred different AI doctor. The most advantage of AI doctor is that billions of AI doctors can be updated within a split second regarding new medicine or a new form of epidemic etc.

[4]AGI falls under AI but AGI expects the machine to be equally as smart as a human.

Hence it would be madness to block automation in fields such as transport and healthcare because it protects humanity.

"What brain scientists are learning today about the amygdale and the cerebellum might make it possible for computers to outperform Human psychiatrists and bodyguards in 2050" (Harari 2018). These words are responsible for the good number of Luddites. Will it outperform human in future? Yes, it is pretty sure that AI will outperform human in many fields especially with regard to the job. The rise of the useless class will be the end result of automation. 17.78 million People work as a driver to earn their daily living. What will these people do if vehicles get automated? One of the main sources of income of a developing country is the sale of cheap labour. The out spring of call centres and IT parks in India are a visible example of it. Suppose an AI calling assistant is created then all the call centres will be out of a job. Some claim that at the one hand we lose Jobs but on the other hand, AI creates many new Job sectors like remote control, data analysis and cyber security. But how many of those who lost the job can be trained again to fit a new job? Or how many of them have the mental strength to face a major shift? What about the people in their 40s and 50s? Are they going to be trained again? "By 2050 useless class might emerge not merely because of lack of jobs or lack of relevant education, but also because of insufficient mental stamina" (Harari 2018). The result of mass automation is the displacement of many which in turn give rise to a useless class and their future is at risk.

Concluding Remarks

The further question that threatens us, Will technological evolution leads us to digital dictatorship? Yuval Harari in his book 21 Lessons for the 21st Century shares the possibility of a future where human becomes incompetent with the AI and further human is not even needed as a consumer to buy the product. He claims, "Theoretically, you can have an economy in which a mining corporation produces and sells iron to Robotics Corporation, the robotics corporation produces and sells robots to the mining corporation, which mines more iron, which is used to produce more robots, and so on."(Harari, 2018), these robots can expand to the far reaches of the galaxy and they don't want a human to buy it. This cannot be considered a silly possibility. Once human become useless then it points to the shift in authority from human to AI. Eventually, it will lead to a digital dictatorship where human have no value even as a consumer. Google algorithm is the best example of digital dictatorship in the present world. Who selects the best website in the world? The website which the Google algorithm rates as best becomes the best website. Human has nothing to do with it. The writers who want to publish anything online try to choose the words that are pleasing to the Google algorithm; otherwise, it may not get the right attention and care. "Notwithstanding the danger of mass unemployment, what should worry about even more is the shift in authority from humans to algorithms, which might destroy any remaining faith in the liberal story and open the way to the rise of digital dictatorships." (Harari 2018). So our concerns should be: a) what to do in order to prevent jobs from being lost? b) What to do in order to create enough new jobs? c) What to do if, despite our best efforts, job losses significantly outstrip job creation? And most important; d) How to protect Humans rather than jobs?

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